Magazine
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News focus

Pushing the boundaries

Britain is leading the way in Europe on the development of a framework for research on human cloning with proposals for the limited creation of such embryos in Newcastle. Nigel Williams reports.

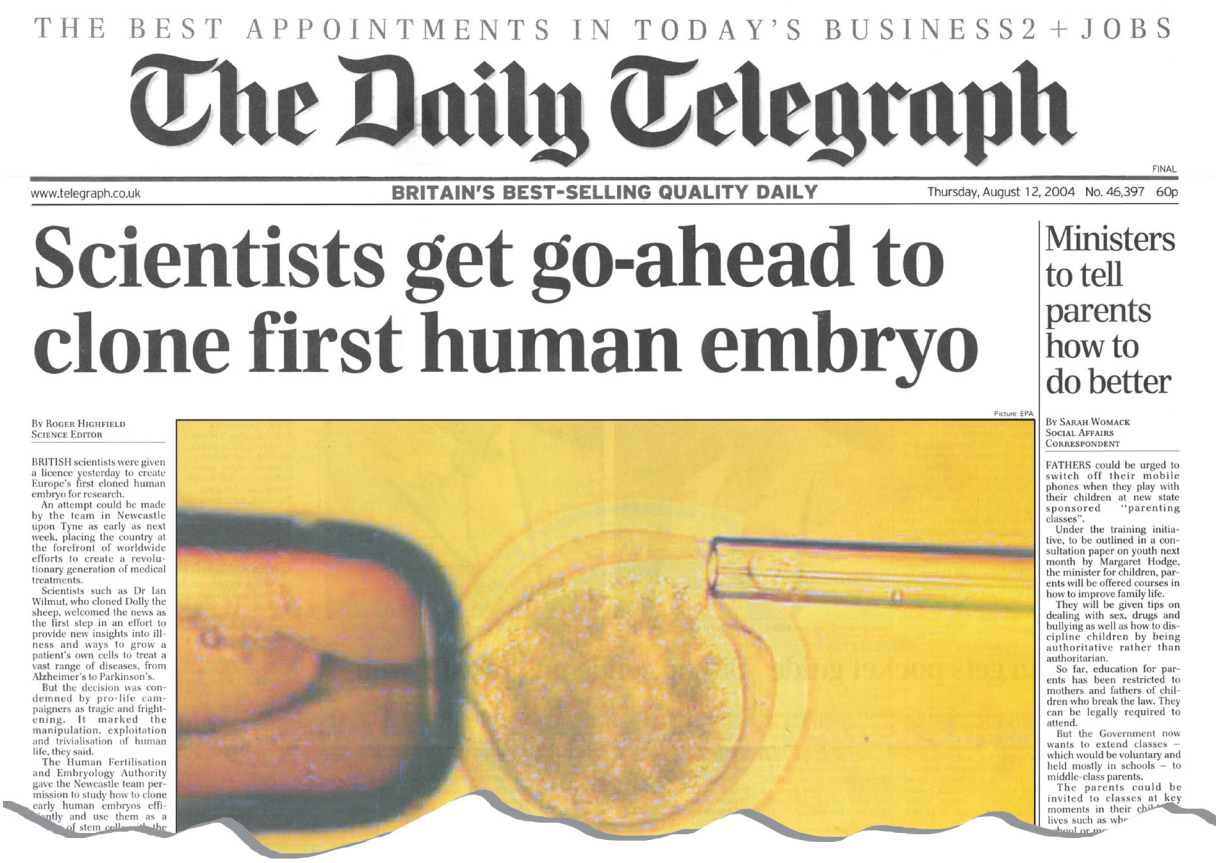
In spite of the controversy surrounding human cloning, British scientists were given a licence last month to create Europe's first cloned human embryos for strictly controlled research. The licence was granted to a team in Newcastle upon Tyne, placing the country at the forefront of worldwide efforts to create a revolutionary generation of medical treatments.

Scientists such as Ian Wilmut, who cloned Dolly the sheep, welcomed the news as the first step in an effort to provide new insights into illness and ways to grow a patient's own cells to treat a vast range of diseases, from Alzheimer's to Parkinson's.

But the decision was condemned by pro-life campaigners as tragic and frightening. It marked the manipulation, exploitation and trivialisation of human life, they said.

The Human Fertilisation and Embryology Authority gave the Newcastle team permission to study how to clone early human embryos efficiently and use them as a source of stem cells with the potential to develop into any type for medical treatments and to understand disease. The authority emphasised: "Stem cells created under this licence will be used for research only." It is the first time such work has been approved in Europe.

When the application was submitted in February by Alison Murdoch, of the Newcastle NHS Fertility Centre, and Miodrag Stojkovic, of Newcastle University, the aim was to develop a treatment for diabetes and to reach a point where a type I diabetic's tissue could be grown for transplant. But the image of therapeutic cloning as a potential cure received a dent when it emerged that the overall aim of the original application was questioned by a committee of the Fertilisation and Embryology Authority. Because it raised legal



THE BEST APPOINTMENTS IN TODAY'S BUSINESS2 + JOBS

The Daily Telegraph

FINAL

www.telegraph.co.uk BRITAIN'S BEST-SELLING QUALITY DAILY Thursday, August 12, 2004 No. 46,397 60p

Scientists get go-ahead to clone first human embryo

By Roger Highfield
Science Editor

BRITISH scientists were given a licence yesterday to create Europe's first cloned human embryo for research.

An attempt could be made by the team in Newcastle upon Tyne as early as next week, placing the country at the forefront of worldwide efforts to create a revolutionary generation of medical treatments.

Scientists such as Dr Ian Wilmut, who cloned Dolly the sheep, welcomed the news as the first step in an effort to provide new insights into illness and ways to grow a patient's own cells to treat a vast range of diseases, from Alzheimer's to Parkinson's.

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Picture: EPA

Ministers to tell parents how to do better

By Sarah Womack
Social Affairs Correspondent

FATHERS could be urged to switch off their mobile phones when they play with their children at new state sponsored "parenting classes".

Under the training initiative, to be outlined in a consultation paper on youth next month by Margaret Hodge, the minister for children, parents will be offered courses in how to improve family life.

They will be given tips on dealing with sex, drugs and bullying as well as how to discipline children by being authoritative rather than authoritarian.

So far, education for parents has been restricted to mothers and fathers of children who break the law. They can be legally required to attend.

But the Government now wants to extend classes – which would be voluntary and held mostly in schools – to middle-class parents.

The parents could be invited to classes at key moments in their ch... lives such as wh... ...hool or ...

Headline news: The front page of one British newspaper reported the decision to allow limited research in Newcastle on the creation of human clones. The decision leads the way in European research on aspects of stem cell research.

issues that could be seized upon by pro-life campaigners, the team has dropped the aim for the time being.

Research into therapeutic cloning is at such an early stage that almost every step of the process is fraught with difficulty. Cloning is so inefficient that typically hundreds of eggs are used trying to create one embryo from which stem cells can then be harvested. Korean scientists who recently reported the first stem-cell line from cloned human embryos said they used more than 200 eggs.

Denise Faustman, a researcher in diabetes at Harvard Medical School, said a 'paradigm shift' in diabetes research had occurred that placed more emphasis on alternative approaches. Pro-life groups, such as Comment on Reproductive Ethics (Core), said that stem cells from a cloned embryo of a diabetic patient may suffer from the same disorder. They cite evidence from studies in mice that the stem cells may proliferate out of control and provoke immune reactions. For 'pro-life' campaigners, the inefficiency of cloning is a serious impediment. Patrick Cusworth, of Life, says that if 350,000 people in Britain have type I diabetes, then with today's success rates it would take 35 million eggs to treat them all using therapeutic cloning. That compares with 930,000 embryos created in fertility clinics since 1990.

Core said it was taking legal advice on the legality of the cloning licence. Josaphine Quintavalle, a spokesperson, also questioned whether there was a conflict of interest in the role of Murdoch as head of the fertility unit that provides eggs for cloning and her role in submitting the application to use the eggs. Murdoch said: "We have overwhelming support from senior scientists and clinicians from all over the world and many letters from patients who may benefit from the research.

"Realistically, we have at least five years of further laboratory work to do before we move into clinical trials but this could be reduced if we receive additional funding."

The British government is considering a raft of policies to bolster the economies of northern England, which may include plans for northern universities. The outcome may see Newcastle becoming a global centre for researching stem cell therapies.

Stojkovic said he was surprised and pleased that the licence had been granted. He said: "Newcastle is now the national front-runner in this area of research but pressure is mounting in America for its scientists to be allowed to do this work. If we are to stay at the cutting edge, we must obtain further financial backing, or, as has happened before, Britain will lose out."

The decision means that the Newcastle team could become only the second in the world to carry out human cloning successfully after the recent claim by Korean scientists.

Suzi Leather, the chairman of the Human Fertilisation and Embryology Authority, said: "After careful consideration of all the scientific, ethical, legal and medical aspects of the project, the licence committee agreed to grant an initial one-year research licence to the Newcastle Centre for Life.

"In Britain, research on human embryos is permitted only for certain purposes. The purpose of this research is to increase knowledge about the development of embryos and enable the knowledge to be applied in developing treatments for serious disease. This research is preliminary. It is not aimed at specific illnesses."

At Newcastle, Murdoch and Stojkovic now have the chance to see just how difficult human therapeutic cloning will be. "It could be that it works in humans straight away, or it could turn out to be much tougher than doing it in animals," says Murdoch. "There are big hurdles, but none are insurmountable. If you think back 25 years when IVF first started, if we'd given up when the first few attempts didn't work, we'd never have the routine service we have now."

Q & A

James Gould

James Gould is Professor of Ecology and Evolutionary Biology at Princeton University. He has worked on communication, navigation, learning and cognition in animals, as well as the evolution of female-choice sexual selection. His books include Ethology *(Norton 1982),* Biological Science *(Norton, 1996),* The Honey Bee *(Freeman, 1995),* Sexual Selection *(Freeman, 1996),* The Animal Mind *(Freeman, 1999), and* BioStats Basics *(Freeman, 2001).*

What attracted you to biology? It was the infectious (if naïve) enthusiasm of my college physics lecturer, Richard Feynman. He was full of ideas about how physics could account for the physiology and evolution of plants and animals — everything from the transport of water in trees to the spacing of ommatidia in compound eyes. The sections on polarized light and magnetic fields turned out to be very useful.

Equally important was my chance encounter with Konrad Lorenz's *King Solomon's Ring*. This led me to take Seymour Benzer's behavioral biology course, which lured me into the dance-language controversy. In 1946, Karl von Frisch reported that honey bees have an abstract language — a communication system which encodes the distance, direction and quality of a food source. The dances do occur and (with enough averaging) the location can be inferred, but an American group had just shown that conventional olfactory cues might explain everything; the correlations were, in their view, an artifact. Designing a test that pitted odor against location was an exhilarating challenge. The dance is also a read-out of what foragers have extracted in the way of navigation cues. And then they are content to visit a feeder every few minutes, cheerfully allow themselves to be marked or moved, have the floral stimuli modified between or even during trips, and in nearly every